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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/852,611	05/09/2001	Jerold Shan	HP-10007924	4891

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EXAMINER
REAGAN, JAMES A

ART UNIT	PAPER NUMBER
3621	

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/852,611	SHAN ET AL.
	Examiner	Art Unit	
	James A. Reagan	3621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *13 June 2005*.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-18* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-18* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some *   c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1.   This action is in response to the amendment filed on 13 June 2005.

2.   Claims 5 and 14 have been amended.

3.   Claims 1-18 have been examined.

RESPONSE TO ARGUMENTS

4.   Applicant's arguments received on 13 June 2005 have been fully considered but they are not persuasive. Referring to the previous Office action, Examiner has cited relevant portions of the references as a means to illustrate the systems as taught by the prior art. As a means of providing further clarification as to what is taught by the references used in the first Office action, Examiner has expanded the teachings for comprehensibility while maintaining the same grounds of rejection of the claims, except as noted above in the section labeled "Status of Claims." This information is intended to assist in illuminating the teachings of the references while providing evidence that establishes further support for the rejections of the claims.

        Applicant argues that *Cortes fails to disclose constructing a model which simulates shopping behavior as a function of the customer profile information, customer log information, product information, and promotion attributes. Cortes does not relate to on-line shopping and does not disclose generating a percentage chance that a customer will buy something.* The examiner is troubled by the apparent lack of familiarity that the Applicant has with the Cortes reference. Cortes is directed to understanding behavioral characteristics of consumers, not to determining what kind of phone line a consumer utilizes, as the applicant clearly miscategorizes. To that end, Cortes uses the widely-accepted technique of regression analysis to model consumer behavior. See at least column 7, lines 45+, Figures 2 and 3, as well as associated

text. Cortes also shows log information (see at least Figure 1 and as well as associated text), consumer profiles (see at least column 7, lines 45+, Figures 2 and 3, as well as associated text), product specifics (see at least column 3, lines 20-26), and promotion attributes (see at least column 3, lines 20-26). If it is the Applicant's position that Cortes could not in any way anticipate the instant invention, the Examiner respectfully points out that Cortes is clearly analogous to the applicant's invention. As the Applicant surely knows, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the Applicant is directed to the summary of the Cortes invention, wherein Cortes specifically states, "Making inferences from data has been a long tradition in the field of statistics. The present invention provides the ability to make inferences from data when the size of the data set precludes conventional analyses. Data streams may comprise transaction records (transactions) that capture the salient details of a transaction between two entities. Examples of types of transactions to which the present invention can be applied include such things as credit card purchases; telephone call records, packet headers in data communications; and stock transactions." To support, Cortes unambiguously utilizes statistical regression analysis to achieve the goal of making inferences from data. See at least column 7, lines 45+, Figures 2 and 3, as well as associated text.

Applicant also asserts that, "Cortes does not disclose generating a percentage chance..." However, Cortes does disclose a probability function based on the statistical regression analysis, plainly equivalent to a percentage chance.

It appears as if the Appellant is attacking the references in a piecewise fashion, instead of in combination, as intended by the Examiner and as shown above in the rejections under 35 USC § 103(a). Whereas Cortes may not be specifically applied to online shopping, Cortes is directed to wards credit card transactions, a widely-accepted payment method for online purchasing. Shortcomings in Cortes are supplemented by Scroggie, who discloses providing coupons to

online shoppers and gathering demographic data to more readily match incentives with consumers.

Applicant argues that there is no motivation to combine the applied references. In response to Applicant's argument that there is no suggestion to combine the references, the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do sp found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine,* 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones,* 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Furthermore, the Examiner recognizes that references cannot be arbitrarily altered or modified and that there must be some reason why one skilled in the art would be motivated to make the proposed modifications. Although the motivation or suggestion to make modifications must be articulated, it is respectfully submitted that there is no requirement that the motivation to make modifications must be expressly articulated within the references themselves. References are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures, *In re Bozek,* 163 USPQ 545 (CCPA 1969).

The Examiner is concerned that the Applicant apparently ignores the mandate of the numerous court decisions supporting the position given above. The issue of obviousness is not determined by what the references expressly state but by what they would reasonably suggest to one of ordinary skill in the art, as supported by decisions in *In re Delisle* 406 Fed 1326, 160 USPQ 806; *In re Kell, Terry and Davies* 208 USPQ 871; and *In re Fine,* 837 F.2d 1071, 1074, 5 USPQ 2d 1596, 1598 (Fed. Cir. 1988) (citing *In re Lalu,* 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1988)). Further, it was determined in *In re Lamberti* et al 192 USPQ 278 (CCPA) that:

    (i)   obvious does not require absolute predictability;

    (ii)   non-preferred embodiments of prior art must also be considered; and

    (iii)   the question is not express teaching of references but what they would suggest.

According to *In re Jacoby,* 135 USPQ 317 (CCPA 1962), the skilled artisan is presumed to know something more about the art than only what is disclosed in the applied references. Within *In re Bode,* 193 USPQ 12 (CCPA 1977), every reference relies to some extent on knowledge of persons skilled in the art to complement that which is disclosed therein. In *In re Conrad* 169 USPQ 170 (CCPA), obviousness is not based on express suggestion, but what references taken collectively would suggest.

In the instant case, the Examiner respectfully notes that each and every motivation to combine the applied references is accompanied by a reasonable expextation which specifically support that particular motivation. As such, it is NOT seen that the Examiner's combination of references is unsupported by the applied prior art of record. Rather, it is respectfully submitted that explanation based on the logic and scientific reasoning of one ordinarily skilled in the art at the time of the invention that support a holding of obviousness has been adequately provided by the motivations and reasons indicated by the Examiner, *Ex pane Levengood* 28 USPQ 2d 1300 (Bd. Pat. App. & Inter., 4/22/93).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cortes et al. (US 6,480,844 B1) in view of Scroggie et al. (US 5,970,469 A).

Examiner's Note: The Examiner has pointed out particular references contained in the prior art of record within the body of this action for the convenience of the Applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply. Applicant, in preparing the response, should consider fully the entire reference as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

Claims 1 and 10:

Cortes discloses the following limitations:

- *storing customer profile information corresponding to a plurality of on-line shoppers;*

- *storing customer log information corresponding to the plurality of on-line shoppers;*

- *storing product information corresponding to a plurality of products offered for sale by the on-line vendor;*

- *storing promotion attributes corresponding to the plurality of products;*

- *constructing a model which simulates shopping behavior as a function of the customer profile information, customer log information, product information, and promotion attributes;*

- *generating a percentage chance that the customer purchases a particular item based on the model;*

- *displaying the percentage chance;*

Cortes does not specifically disclose that the database files are specifically for online shoppers, that their habits are logged, or that the database contains product information and incentives. Scroggie, however, in at least the abstract as well as other relevant text discloses these limitations. It would have been obvious, therefore, to one of ordinary skill in the art at the

time of the invention to apply the data mining principles and regression analysis techniques of Cortes with Scroggie's data concerning online shopping because the results would provide a model for predicting online shopping behavior, thereby maximizing profits.

Claims 2 and 11:

With regard to the limitations of *identifying relevant variables and selecting a plurality of relevant variables in constructing the model*, these steps are inherent to constructing a logical and reasonable regression model.

Claims 3 and 12:

With regard to the limitation of *estimating a parameter for use in constructing the model*, see at least column 2, lines 66-67.

Claims 4 and 13:

With regard to the limitation of *the model comprises a logistic regression model*, see at least column 7, line 47.

Claims 5 and 14:

With regard to the limitation of: the logistic regression model comprises:

$$P (Buy = 1 \mid Select = 1) = \frac{\exp (\beta' X)}{1 + \exp (\beta' X)'}$$

See at least column 7, line 67.

Claims 6 and 15:

The combination of Cortes/Applicant discloses the use of regression analysis techniques as applied to online consumer purchasing as shown in the rejections above. Cortes/Applicant do not specifically disclose that *the model is partially based on traditional logistical regression theory*

and partially on the maximum utility theory. However, the Examiner takes **Official Notice** that these variations of logical regression analysis are old and well-known in the statistical analysis arts as well as the survey and marketing arts. It would have been obvious, therefore, to one of ordinary skill in the art at the time of the invention to combine the data mining principles and regression analysis techniques of Cortes with the established use of traditional logistical regression analysis and maximum expected utility models theory analysis because they provide insight to customer spending habits that may be extrapolated and used to maximize profits and product throughput.

Claims 7, 8, 16, and 17:

The combination of Cortes/Applicant discloses the use of regression analysis techniques as applied to online consumer purchasing as shown in the rejections above. Cortes/Applicant do not specifically disclose:

- *customer profile information includes age, sex, religion, income, ethnicity, marital status, geographical location, number of children, interests, hobbies, spending habits, and zip code.*

- *the customer log information includes contains data regarding when the customer accessed the web site, how long the customer visited the web site, which items were of interest, how the customer heard about the web site, whether the customer saw the promotion, whether the customer was motivated to taking action as a result of the promotion, whether the customer inspected an item, whether the customer put the item back, whether the customer bought an item, and the quantity of items purchased.*

However, the Examiner takes **Official Notice** that these attributes and parameters are old and well-known in the demographic utilization arts as well as the survey and marketing arts. It would have been obvious, therefore, to one of ordinary skill in the art at the time of the invention to combine the data mining principles and regression analysis techniques of Cortes with the

established use of demographics and online activities of consumers because they provide insight

to customer spending habits that may be extrapolated and used to maximize profits and product

throughput.

Claims 9 and 18:

Cortes discloses the use of regression analysis techniques as applied to online consumer

purchasing as shown in the rejections above. Cortes does not specifically disclose that *the*

promotion attributes include one of sales, upgrades, extended warranties, buy-one-get-one free,

financing packages, free options, rebates, coupons, donations to charities, and free gifts.

However, Applicant, in the background of the specification discloses the features as already

prevalent in the art. It would have been obvious, therefore, to one of ordinary skill in the art at the

time of the invention to combine the data mining principles and regression analysis techniques of

Cortes with the Applicant's incentives for online shoppers because the results would provide

increased purchasing thereby maximizing profits.

Conclusion

7.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office

action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is

reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

8..   A shortened statutory period for reply to this final action is set to expire THREE MONTHS from

the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the

mailing date of this final action and the advisory action is not mailed until after the end of the

THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the

date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will the statutory

period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **James A. Reagan** whose telephone number is **571.272.6710.** The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **James Trammell** can be reached at **571.272.6712.** Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://portal.uspto.gov/external/portal/pair . Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866.217.9197** (toll-free).

Any response to this action should be mailed to:

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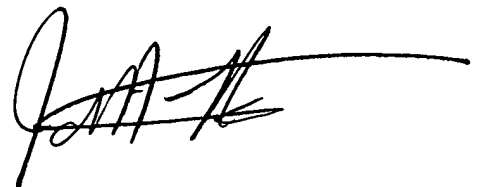
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JAR

26 July 2005